

Claims

What is claimed is:

1. A method of processing a communication in a communication system, the method comprising the steps of:

5 identifying a plurality of words contained within the communication; and
 processing the plurality of words utilizing a joint classifier configured to determine
at least one category for the plurality of words based on application of a combination of word
information and word class information to the plurality of words.

10 2. The method of claim 1 wherein the joint classifier is implemented at least in part in a
processor-based device of the communication system.

 3. The method of claim 2 wherein a natural language call routing element of the switch
routes the communication to a particular one of a plurality of destination terminals of the system
15 based on the determined category.

 4. The method of claim 1 wherein an automatic word class clustering algorithm is utilized
to generate the word classes from at least one training corpus.

20 5. The method of claim 1 wherein one or more of the words and word classes utilized to
provide the respective word information and word class information are selected using information
gain based term selection.

 6. The method of claim 5 wherein the information gain based term selection determines an
25 information gain value for each of a plurality of terms, each of the terms comprising a word or a
word class, the information gain value being indicative of entropy variations over a plurality of

possible categories, and being determined as a function of a perplexity computation for an associated classification task.

5 7. The method of claim 1 wherein the combination of word information and word class information is generating by appending a class corpus to a word corpus.

8. The method of claim 1 wherein the combination of word information and word class information is generated by joining sets of multiple words with corresponding sets of word classes.

10 9. The method of claim 1 wherein the combination of word information and word class information is generated by interleaving individual words with their corresponding word classes.

15 10. The method of claim 1 wherein the combination of word information and word class information comprises at least one term-category matrix characterizing words and word classes selected using information gain based term selection.

11. The method of claim 10 wherein a cell i, j of the term-category matrix comprises information indicative of a relationship involving an i -th selected term and a j -th category.

20 12. The method of claim 5 wherein the information gain based term selection calculates information gain values for each of a plurality of terms, a given one of the terms comprising a word or a word class, sorts the terms by their information gain values in a descending order, sets a threshold as the information gain value corresponding to a specified percentile, and selects the terms having an information gain value greater than or equal to the threshold.

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13. The method of claim 12 wherein the selected terms are processed to form a term-category matrix utilizable by the joint classifier in determining one or more categories for the plurality of words.

5 14. The method of claim 1 wherein the joint classifier comprises a joint latent semantic indexing classifier.

15. An apparatus for processing a communication in a communication system, the apparatus comprising:

10 a processor-based device operative to identify a plurality of words contained within the communication, and to process the plurality of words utilizing a joint classifier configured to determine at least one category for the plurality of words based on application of a combination of word information and word class information to the plurality of words.

15 16. The apparatus of claim 15 wherein the processor-based device comprises a switch of the communication system.

17. The apparatus of claim 15 wherein the processor-based device comprises a processor coupled to a memory.

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18. An article of manufacture comprising a machine-readable storage medium containing software code for use in processing a communication in a communication system, wherein the software code when executed implements the steps of:

identifying a plurality of words contained within the communication; and

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processing the plurality of words utilizing a joint classifier configured to determine at least one category for the plurality of words based on application of a combination of word information and word class information to the plurality of words.